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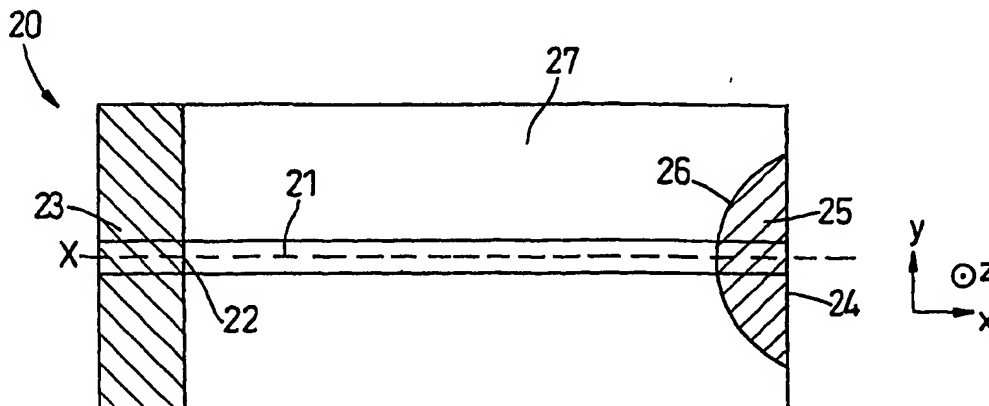
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(54) Title: **SEMICONDUCTOR OPTICAL DEVICE WITH BEAM FOCUSING**



(57) Abstract: An integrated optical device formed in a semiconductor substrate incorporated an integral lens element in the substrate for providing focusing of the output beam. The device includes an optically active region for generating and confining optical radiation and having an output end for emitting an output beam from the optically active region; and a lens region adjacent the output end which has an increased band gap to the adjacent substrate material and is shaped to provide a lens effect on said output beam. The optically active region forms a cavity having a longitudinal axis, and the lens region extends along the longitudinal axis and has a lateral extent that varies as a function of distance along the longitudinal axis.

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